

Please read and save these instructions. Read carefully before attempting to assemble, install, operate or maintain the product described. Protect yourself and others by observing all safety information. Failure to comply with instructions could result in personal injury and/or property damage! Retain instructions for future reference.

Dayton® Propane Convection Construction Heaters

Description

Dayton Models 6BY73A and 6BY74A heaters are 60,000 to 200,000 BTU/Hr construction heaters. These heaters use propane gas for combustion. They are primarily intended for temporary heating of well ventilated buildings under construction, alteration or repair. These heaters should only be used outdoors, and indoor use only in well ventilated, non-residential areas.



Specifications

Model	BTU/Hr	Gal/Hr	Lbs/Hr	Manifold Pressure-Hi/lo	Ignitor Gap	Weight	Size
6BY73A	60,000 to 80,000	0.66/0.87	2.78/3.70	12.0"/13.0" W.C.	0.195"	11.5 Lbs.	19.5" x 16" x 16"
6BY74A	70,000 to 200,000	0.76/2.18	3.23/9.25	4.0 to 5.0 PSI	0.130"	14.3 Lbs.	26.4" x 16" x 16"

Fuel Type – Propane Vapor Only

Ignition Type – Piezo

Minimum Operating Temp. – 20°F (-29°C)



Figure 1 – Model 6BY73A



Figure 2 – Model 6BY74A

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Unpacking

1. Remove all packing items applied to heater for shipment. Keep plastic cover caps attached to inlet connector and hose/regulator assembly for storage.
2. Remove all items from carton.
3. Check all items for shipping damage. If heater is damaged, promptly inform branch where you purchased heater.

General Safety Information

⚠ DANGER Indicates an imminently hazardous situation which, if not avoided, WILL result in death or serious injury.

⚠ WARNING Indicates a potentially hazardous situation which, if not avoided, COULD result in death or serious injury.

⚠ CAUTION Indicates a potentially hazardous situation which, if not avoided, MAY result in minor or moderate injury.
Consumer: Retain this manual for future reference.

Dayton® Propane Convection Construction Heaters

General Safety Information (Continued)

⚠ WARNING *General Hazard Warning: Failure to comply with the precautions and instructions provided with this heater can result in death, serious bodily injury, and property loss; or damage from hazards of fire, explosion, burn, asphyxiation, carbon monoxide poisoning, and/or electrical shock. Only persons who can understand and follow these instructions should use or service this heater. If you need assistance or heater information such as an instruction manual, labels, etc. contact your local Grainger branch.*

⚠ WARNING *Fire, burn, inhalation, and explosion hazard. Keep solid combustibles such as building materials, paper, or cardboard, at a safe distance away from heater as recommended by the instructions. Never use the heater in spaces which do or may contain volatile or airborne combustibles or products such as gasoline, solvents, paint thinner, dust particles, or unknown chemicals.*

This heater is designed as a construction heater in accordance with ANSI Z83.7/CGA2.14. Other standards govern the use of fuel gases and heating products for specific uses. Your local authority can advise you about these. The primary purpose of construction heaters is to provide temporary heating of buildings under construction, alteration, or repair. Properly used, the heater provides safe economical heating. Products of combustion are vented into the area being heated.

⚠ WARNING *Do not operate this heater until you read and thoroughly understand the safety and operating instructions. Not for home or recreational use. Failure to comply with the precautions and instructions provided with this heater can result in death, serious injury, property loss, or damage from fire, explosion, burns, asphyxiation, or carbon monoxide poisoning. Only persons who can understand and follow the instructions should use or service heater. If you need assistance or heater information such as an instruction manual, labels, etc., contact your local Grainger branch.*

⚠ WARNING *Combustible by-products produced when using this product contain carbon monoxide, a chemical known to the State of California to cause cancer, birth defects, or other reproductive harm.*

⚠ WARNING *Not for home or recreational vehicle use. The hose assembly shall be protected from traffic, building material and contact with hot surfaces both during use and while in storage.*

⚠ WARNING *Proposition 65 warning: Fuels used in gas, wood burning or oil-fired appliances, and the products of combustion of such fuels, contain chemicals known to the State of California to cause cancer, birth defects and other reproductive harm.*

We cannot foresee every use which may be made of our heaters.

CHECK WITH YOUR LOCAL FIRE SAFETY AUTHORITY IF YOU HAVE QUESTIONS ABOUT HEATER USE.

Other standards govern the use of fuel gases and heat producing products for specific use. Your local authority can advise you about these.

CARBON MONOXIDE POISONING:

Some people are more affected by carbon monoxide than others. Early signs of carbon monoxide poisoning resemble the flu with headaches, dizziness, and or nausea. If you have these signs, the heater may not be working properly. Get fresh air at once! Check for proper ventilation and have heater serviced.

PROPANE GAS: Propane gas is odorless. An odorizing agent is added to propane gas. The odor helps you detect a propane gas leak. However, the odor added to propane gas may fade. Propane gas may be present even though no odor exists. Make sure you read and understand all warnings. Keep this manual for reference. It is your guide to safe and proper operation of this heater.

- Install and use heater with care.
- Follow all local ordinances and codes. In the absence of local ordinances and codes refer to the standard for storage and handling of liquefied petroleum gas, ANSI/NFPA 58. This instructs on the safe storage and handling of propane gas.
- Use only a propane gas tank setup for vapor withdrawal.

Models 6BY73A and 6BY74A

General Safety Information (Continued)

- Provide adequate ventilation. Before using heater, check and follow the fresh air requirements on this page. This heater produces carbon monoxide which is listed by the State of California as a reproductive toxin under Proposition 65.
- For indoor use only.
- Do not use heater in occupied dwellings, or in living or sleeping quarters.
- Do not use heater in basement or below ground level. Propane gas is heavier than air. If a leak occurs, propane gas may sink to the lowest possible level.
- Keep appliance area clear and free from combustible materials, gasoline, paint thinner, and other flammable vapors and liquids. Dust is combustible. Do not use heater in areas with high dust content.
- Minimum heater clearances from combustibles:

6BY73A

Sides: 3 feet
Top: 5 feet

6BY74A

Sides: 3 feet
Top: 7 feet

- Keep heater at least 6 feet from propane tank(s).
- Keep propane tank(s) below 100°F.
- Check heater for damage before each use. Do not use a damaged heater.
- Use only the hose and factory preset regulator provided with heater.
- Check hose before each use of heater. If highly worn or cut, replace only with hose specified by manufacturer before using heater.

- Do not alter heater. Keep heater in its original state.
- Do not use heater if altered.
- Locate heater on stable and level surface while heater is hot or operating.
- Not intended for use on finished floors.
- Never block air inlet (bottom of housing), or air outlet (top of housing) of heater.
- Do not leave heater unattended.
- Keep children and animals away from heater.
- Never move, handle, or service a hot or operating heater. Severe burns may result. Wait 15 minutes after turning heater off before moving.
- To prevent injury, wear gloves when handling heater.
- Turn off propane supply to heater when not in use.
- Use only original replacement parts.

- Do not substitute or use generic parts. Use of unauthorized components will void your warranty.
- Improper replacement parts could cause serious or fatal injuries.
- Locate propane containers at least 6 feet from the heater and do not direct exhaust towards containers.

FRESH OUTSIDE AIR OPENING REQUIREMENTS

Heater Size	Sq. Foot Opening
80,000 BTU	2'6"
200,000 BTU	6'0"

Assembly

Tools required: Screwdriver, crescent wrench.

CAUTION Do not attempt to light heater until fully assembled.

HEATER ASSEMBLY

1. Remove all packing items supplied with heater for shipment. Keep plastic cover caps (attached to connector inlet and regulator hose assembly) for storage.

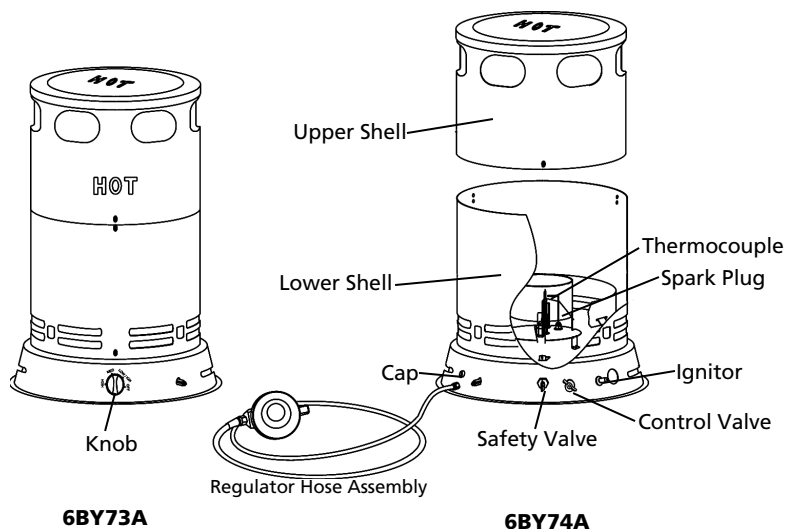


Figure 3 – Part Identification

Dayton® Propane Convection Construction Heaters

Assembly (Continued)

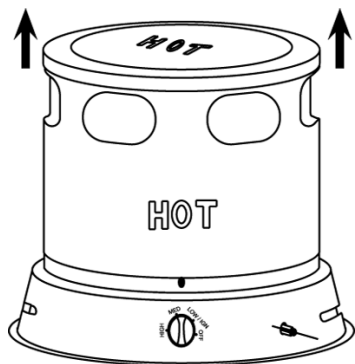


Figure 4 – Remove Upper Housing

2. Remove all items from carton and check for shipping damage. If heater is damaged, promptly inform the branch where you purchased the heater.
3. Slide upper housing assembly up and off shell housing.
4. Remove regulator hose assembly bag from inside base.
5. Screw four (4) Phillips head screws into place in bottom holes at top of lower shell.

6. Place upper housing assembly onto lower housing. Secure with four Phillips screws in top holes of lower housing.
7. For 6BY73A, attach knob to gas valve stem (Figure 5).
8. Provide propane supply system (Refer to Propane Supply on page 5).
9. Connect fuel gas fittings on regulator/hose assembly to propane tank(s). Turn fuel gas fitting counter-clockwise into threads on tank. Tighten firmly with wrench.

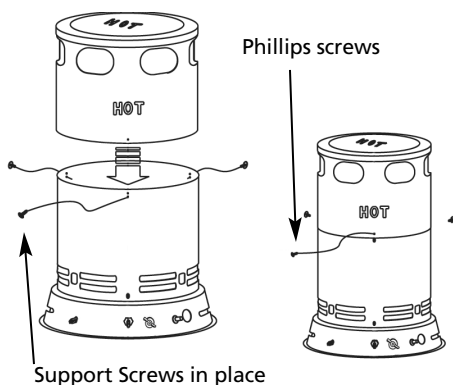


Figure 6 – Assembling Housing Halves

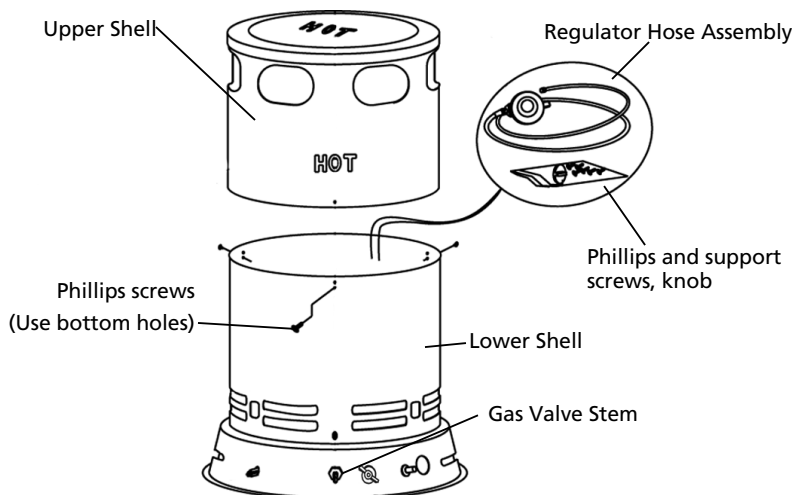


Figure 5 – Removing Hose Assembly - Screw Placement

IMPORTANT: Tighten regulator with vent pointing down. Pointing vent down protects regulator from weather damage (Figure 7).

10. Attach hose to the connector inlet (Figure 8). Use a wrench to prevent connector inlet on heater from turning as you tighten firmly using a second wrench. You must use the regulator supplied with heater even if propane tank has one.
11. Open propane cylinder valve slowly. **NOTE:** If not opened slowly, excess-flow check valve in fitting will stop gas flow. If this happens, you may hear a click inside the regulator assembly. This is the check valve closing. To reset the excess-flow check valve, close propane supply, and wait one minute before re-starting.
12. Check all connections for leaks. Apply mixture of liquid soap and water to gas joints. Bubbles forming show a leak that must be corrected. Close propane cylinder valve.

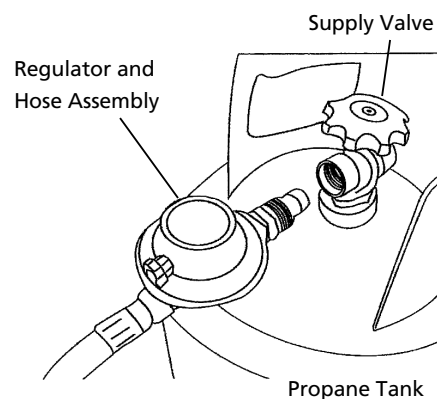


Figure 7 – Proper Regulator Connection

Models 6BY73A and 6BY74A

Operation

THE FUEL SYSTEM: The hose/regulator assembly attaches to the propane gas supply. This provides fuel to the heater.

THE AUTOMATIC CONTROL SYSTEM:

The automatic control valve shuts off the heater if the flame goes out.

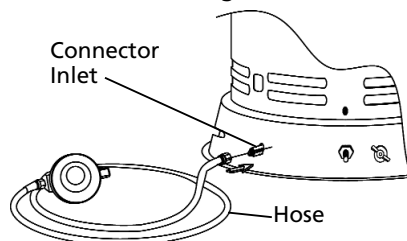


Figure 8 – Hose and Inlet Connector

THE IGNITION SYSTEM: The piezo ignition lights the burner fuel supply.

THE PROPANE SUPPLY: You must provide the propane gas and tank(s).

Use this heater only with a propane vapor withdrawal system. Refer to chapter 5 of the standard for storage and handling of liquefied petroleum gas, ANSI/NFPA 58. Your local library or fire department will have this booklet.

The amount of propane gas ready for use from propane tank(s) vary. Two factors decide this amount:

1. The amount of liquid propane gas in tank(s).
2. The temperature of tank(s).

Average Temperature at Tank Location	Number of Tanks	
	Model 6BY73A	Model 6BY74A
60°F	1	2
40°F	1	2
30°F	1	2
20°F	1	2
10°F	2	3
0°F	2	3

Figure 9 – Size and Capacity of 100 Lb. Propane Cylinders

Figure 9 shows the minimum number of 100-pound tank(s) or one larger tank may be needed in cooler weather. Your propane gas dealer will help you select the proper supply system.

VENTILATION – MODEL 6BY73A

▲ WARNING Provide at least a 2½ square foot opening of fresh, outside air while operating heater. If proper fresh, outside air is not provided, carbon monoxide poisoning can occur. Provide fresh air ventilation before operating heater.

VENTILATION – MODEL 6BY74A

▲ WARNING Provide at least a 6 square foot opening of fresh, outside air while operating heater. If proper fresh, outside air is not provided, carbon monoxide poisoning can occur. Provide fresh air ventilation before operating heater.

Review and understand the warnings in the Safety Information section on Pages 1-3. They are needed to safely operate this heater. Follow all local codes when using this heater.

LIGHTING/OPERATING INSTRUCTIONS 6BY73A

▲ CAUTION Due to high surface temperature keep children, clothing, and furniture away. Keep burner and combustion chamber clean. This heater shall not be installed in a bedroom or a bathroom.

▲ WARNING Hot while in operation. Do not touch. Keep children, clothing, furniture, gasoline, and other liquids having flammable vapors away.

1. **STOP!** Read the safety information on the side of the heater.
2. Turn control knob clockwise to OFF position.
3. Turn propane supply valve ON.
4. Depress control knob and turn counterclockwise to LOW/IGN position to light burner (Figure 10).
5. If burner does not light, turn knob to OFF position and repeat step 4. Keep control knob depressed for approximately 10 to 15 seconds, then release control knob.
6. If burner flame goes out, repeat steps 4 and 5.
7. With burner operating, the control knob may be turned counterclockwise to desired heating level between LOW, MED, and HIGH.

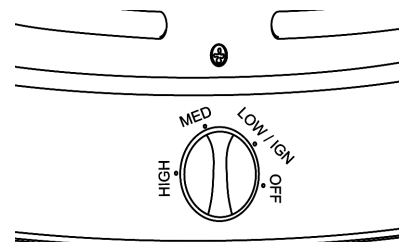


Figure 10 – Heater Control Knob

TO TURN OFF APPLIANCE

1. Turn control knob clockwise to OFF position.
2. Turn propane supply valve OFF. Gas must be turned off at the Propane Supply Cylinder(s) when the heater is not in use.

Dayton® Propane Convection Construction Heaters

Operation (Continued)

LIGHTING/OPERATING INSTRUCTIONS 6BY74A

PREPARING FOR OPERATION

1. Check the heater for possible shipping damage. If any is found, immediately notify your local branch.
2. Follow all Safety Information on Pages 1-3.

▲ WARNING *Before lighting heater, turn main burner valve to LIGHT position.*

START: Read safety information before starting the heater.

1. Fully open the valve on the propane tank, and set burner valve to LIGHT position, then wait 15 seconds before Step 2.
2. Depress the red button on the safety shut-off valve, admitting gas to the burner. Then push and release the ignition button until the burner lights.
3. When the burner lights, continue to keep the red button depressed for 30 seconds, then release.
4. If burner goes out, wait 5 minutes and repeat lighting procedure.
5. When burner lights, open burner valve to ON position, to operate heater. Partially close valve to regulate heat output.

▲ CAUTION *Adjusting burn rate too low can cause soot. Watch for and avoid a yellow, smokey flame.*

STOP: Securely close valve on propane tank. Turn main burner valve to LIGHT position.

RESTART AFTER SAFETY SHUTDOWN

Securely close valve at propane tank. Wait five minutes. Restart following "Start" procedure. Turn to OFF at the propane supply cylinder(s) when heater is not in use.

Maintenance

▲ WARNING *Never attempt to service heater while it is connected to propane supply, operating, or hot. Severe burns can occur.*

1. Keep heater clean.
2. Inspect heater before each use. Check connections for leaks. Bubbles forming show a leak that must be corrected. Correct leaks at once.
3. Inspect regulator hose assembly before each use. If hose is highly worn or cut, replace with hose specified by manufacturer.
4. Keep appliance area clear and free from combustible materials, gasoline, and other flammable vapors and liquids.

5. Have heater inspected yearly by a qualified service person.

6. Never obstruct the flow of combustion and air ventilation.

STORAGE

▲ CAUTION *Disconnect heater from propane supply tank(s).*

1. Store propane tank(s) in safe manner. Refer to Chapter 5 of standard for storage and handling of liquefied petroleum gasses, ANSI/NFPA 58. Follow all local codes. Always store propane tanks outdoors.
2. Place plastic cover caps over brass fittings on connector inlet and regulator hose assembly.
3. Store in a dry, clean, safe place.

For Repair Parts, call 1-800-323-0620

24 hours a day – 365 days a year

Please provide following information:

- Model number
- Serial number (if any)
- Part description and number as shown in parts list

Address parts correspondence to:

Grainger Parts
P.O. Box 3074
1657 Shermer Road
Northbrook, IL 60065-3074 U.S.A.

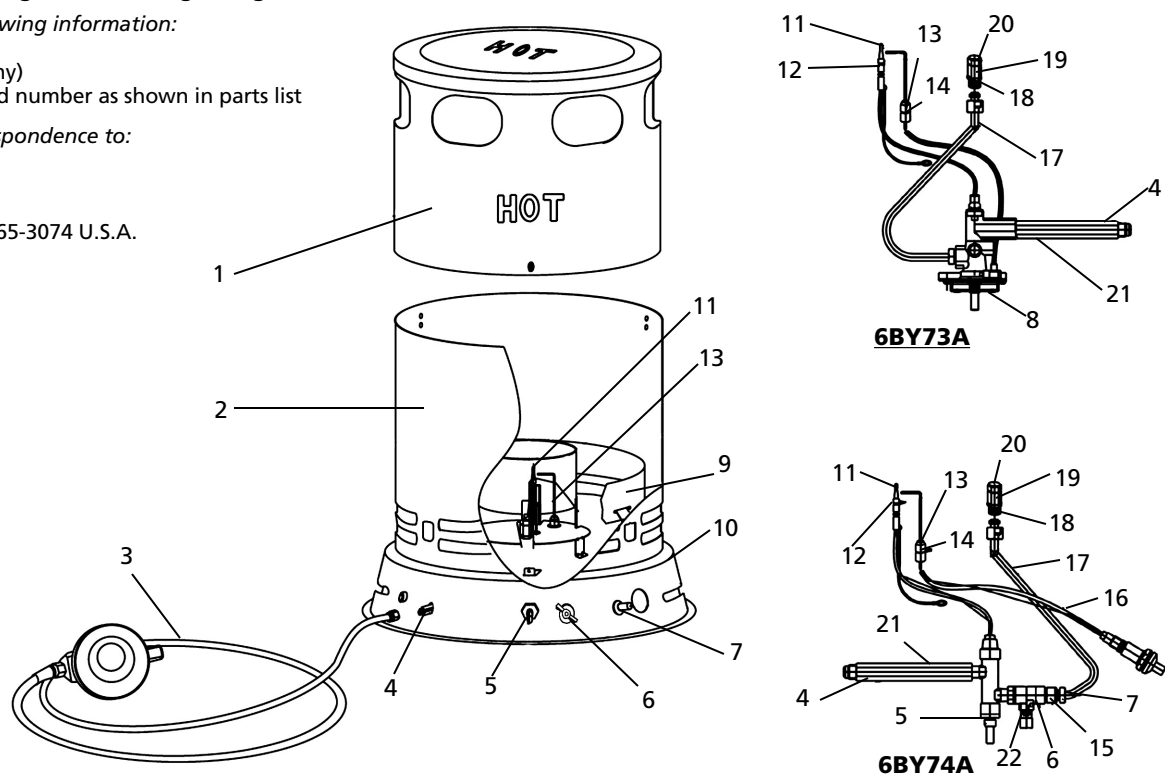


Figure 12 – Repair Parts Illustration for Propane Convection Construction Heaters

Repair Parts List for Propane Convection Construction Heaters

Reference Number	Description	Part Number for Models:		Quantity
		6BY73A	6BY74A	
1	Upper Shell	HV245240013G	HV245240014G	1
2	Lower Shell	HV245240015G	HV245240016G	1
3	Regulator	HV240410002G	HV240410004G	1
4	Inlet Connector	HV245070010G	HV245070010G	1
5	Safety Valve	–	HV240130002G	1
6	Ball Valve	–	HV240150002G	1
7	Piezo Lighter	–	HV241220003G	1
8	Valve Assembly	HV240110005G	–	1
9	Wind Screen	HV245260001G	HV245260001G	1
10	Base	HV245010007G	HV245010009G	1
11	Thermocouple	HV240910002G	HV240910003G	1
12	Thermocouple Bracket	HV245040007G	HV245040007G	1
13	Spark Plug	HV241410001G	HV241410001G	1
14	Spark Plug Bracket	HV245040008G	HV245040008G	1
15	Connector Outlet	–	HV245070008G	1
16	Ignitor Wire	–	HV246010005G	1
17	Outlet Tubing Assembly	HV246050006G	HV246050007G	1
18	Nozzle Nut	HV245180005G	HV245180005G	1
19	Nozzle Holder	HV245150001G	HV245150001G	1
20	Nozzle	HV240810009G	HV240810008G	1
21	Inlet Connector Joint	HV245070011G	HV245070012G	1
22	Ball Valve Stopper & Bracket	–	HV245040012G	1

Dayton® Propane Convection Construction Heaters

Troubleshooting Chart

Symptom	Possible Cause(s)	Corrective Action
Burner fails to light	1. Propane supply valve closed on propane tank(s) 2. Excess-flow check valve closed 3. Blockage in burner nozzle 4. Piezo ignition system not sparking	1. Open propane supply valve slowly 2. Close propane supply valve on propane tank, and reopen slowly 3. Replace burner nozzle 4. Check to assure ignitor electrode gap is .195" (6BY73A). Check wire lead for damage
Burner lights but goes out when control valve knob (6BY73A) or safety valve button (6BY74A) is released	1. Not enough warm-up time 2. Low gas pressure 3. Thermocouple loose or needs to be replaced 4. Automatic control valve needs to be replaced	1. Relight, hold control valve button or knob in 45 seconds 2. Check propane tank(s) for proper gas supply 3. Tighten connection or replace thermocouple 4. Replace control valve
Burn rate is low	1. Main burner valve not fully open 2. Plugged gas orifices 3. Low gas pressure 4. Low fuel supply	1. Fully open main burner valve by turning control knob towards HIGH position until it stops. (6BY73A) or ON position (6BY74A) 2. Replace gas orifice 3. Check gas supply, regulator output 4. Consult propane gas supplier

LIMITED WARRANTY

DAYTON ONE-YEAR LIMITED WARRANTY. Dayton® Propane Convection Construction Heaters, Models covered in this manual, are warranted by Dayton Electric Mfg. Co. (Dayton) to the original user against defects in workmanship or materials under normal use for one year after date of purchase. Any part which is determined to be defective in material or workmanship and returned to an authorized service location, as Dayton designates, shipping costs prepaid, will be, as the exclusive remedy, repaired or replaced at Dayton's option. For limited warranty claim procedures, see PROMPT DISPOSITION below. This limited warranty gives purchasers specific legal rights which vary from jurisdiction to jurisdiction.

LIMITATION OF LIABILITY. To the extent allowable under applicable law, Dayton's liability for consequential and incidental damages is expressly disclaimed. Dayton's liability in all events is limited to and shall not exceed the purchase price paid.

WARRANTY DISCLAIMER. Dayton has made a diligent effort to provide product information and illustrate the products in this literature accurately; however, such information and illustrations are for the sole purpose of identification, and do not express or imply a warranty that the products are MERCHANTABLE, or FIT FOR A PARTICULAR PURPOSE, or that the products will necessarily conform to the illustrations or descriptions. Except as provided below, no warranty or affirmation of fact, expressed or implied, other than as stated in the "LIMITED WARRANTY" above is made or authorized by Dayton.

PRODUCT SUITABILITY. Many jurisdictions have codes and regulations governing sales, construction, installation, and/or use of products for certain purposes, which may vary from those in neighboring areas. While Dayton attempts to assure that its products comply with such codes, it cannot guarantee compliance, and cannot be responsible for how the product is installed or used. Before purchase and use of a product, review the product applications, and all applicable national and local codes and regulations, and be sure that the product, installation, and use will comply with them.

Certain aspects of disclaimers are not applicable to consumer products; e.g., (a) some jurisdictions do not allow the exclusion or limitation of incidental or consequential damages, so the above limitation or exclusion may not apply to you; (b) also, some jurisdictions do not allow a limitation on how long an implied warranty lasts, consequently the above limitation may not apply to you; and (c) by law, during the period of this Limited Warranty, any implied warranties of implied merchantability or fitness for a particular purpose applicable to consumer products purchased by consumers, may not be excluded or otherwise disclaimed.

PROMPT DISPOSITION. Dayton will make a good faith effort for prompt correction or other adjustment with respect to any product which proves to be defective within limited warranty. For any product believed to be defective within limited warranty, first write or call dealer from whom the product was purchased. Dealer will give additional directions. If unable to resolve satisfactorily, write to Dayton at address below, giving dealer's name, address, date, and number of dealer's invoice, and describing the nature of the defect. Title and risk of loss pass to buyer on delivery to common carrier. If product was damaged in transit to you, file claim with carrier.

Manufactured for Dayton Electric Mfg. Co., 5959 W. Howard St., Niles, Illinois 60714 U.S.A.

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